

IN THE CLAIMS

1-18. (Canceled)

19. (Currently Amended) A nonvolatile semiconductor memory device, comprising:
a semiconductor substrate having a peripheral circuit region and a memory cell
region;
a plurality of erasable and programmable memory cell transistors each having a gate
electrode and provided in the memory cell region;
a selection transistor having a gate electrode and provided in the memory cell region;
a peripheral transistor having a gate electrode and provided in the peripheral circuit
region;
~~first post-oxidation films each provided on (1) the gate electrode of all of the plurality
of erasable and programmable memory cell transistors, (2) the gate electrode of the selection
transistor, and (3) the gate electrode of the peripheral transistor; and~~
~~a second post oxidation film provided on the gate electrode of the selection transistor;~~
~~a third post oxidation film provided on the gate electrode of the peripheral transistor;~~
and
an insulating film covering the plurality of erasable and programmable memory cell
transistors, the selection transistor, and the peripheral transistor, the insulating film being
harder for an oxidizing agent to pass therethrough than a silicon oxide film, ~~and the insulating~~
~~film having an oxidized region, and the insulating film covering a side surface of the gate~~
~~electrode of the selection transistor along the gate electrode of the selection transistor,~~
wherein the insulating film comprises a silicon nitride film, and the oxidized region is
provided in a surface of the silicon nitride film.

20. (Previously Presented) The device according to claim 19, wherein a thickness of the oxidized region of the silicon nitride film is not smaller than 1 nm and not larger than 10 nm.

21. (Currently Amended) The device according to claim 19, wherein the silicon nitride film contains hydrogen with a concentration not larger than 3×10^{21} atoms/cm³.

22. (Currently Amended) The device according to claim 19, wherein the silicon nitride film contains hydrogen and a concentration of the hydrogen ~~gradually becomes higher from the surface of the silicon nitride film~~ is more reduced at the surface of the silicon nitride film than in regions underneath the surface of the silicon nitride.

23. (Previously Presented) The device according to claim 19, wherein the gate electrode of each of the plurality of erasable and programmable memory cell transistors, the selection transistor and the peripheral transistor contains a metal or a metal silicide.

24. (Previously Presented) The device according to claim 23, wherein the metal contains tungsten.

25. (Previously Presented) The device according to claim 19, wherein the gate electrode of each of the plurality of erasable and programmable memory cell transistors, the selection transistor, and the peripheral transistor is a stacked gate structure including a floating gate and a control gate, the control gate comprising a metal or a metal silicide.

26. (Previously Presented) The device according to claim 25, wherein the metal contains tungsten.

27. (Previously Presented) The device according to claim 19, further comprising: a contact plug connected to one of a source and a drain region of the selection transistor,

wherein the memory cell transistors are series-connected to each other, one of the memory cell transistors is connected to the contact plug via the selection transistor, and the silicon nitride film covers a side wall of the gate electrode, each of the memory cell transistors, and the selection transistor.

28. (Previously Presented) The device according to claim 27, wherein the silicon nitride film covers a side wall of the gate electrode of the peripheral transistor, and a thickness of a portion of the silicon nitride film covering the side wall of the gate electrode of the selection transistor and a thickness of a portion of the silicon nitride film covering the side wall of the gate electrode of the peripheral transistor are approximately the same.

29. (Previously Presented) The device according to claim 27, wherein a thickness of the oxidized region formed in a portion of the silicon nitride film covering the side wall of the gate electrode for the selection transistor and a thickness of the oxidized region formed in a portion of the silicon nitride film covering the side wall of the gate electrode of the peripheral transistor are approximately the same.

30. (Previously Presented) The device according to claim 27, wherein the memory cell transistors construct a NAND EEPROM.

31. (Previously Presented) The device according to claim 27, wherein the memory cell transistors construct an AND EEPROM.

32. (Currently Amended) A nonvolatile semiconductor memory device, comprising:
a semiconductor substrate having a peripheral circuit region and a memory cell region;
a plurality of erasable and programmable memory cell transistors each having a gate electrode and provided in the memory cell region;
a selection transistor having a gate electrode and provided in the memory cell region;
a peripheral transistor having a gate electrode and provided in the peripheral circuit region;
~~first post-oxidation films each provided on (1) the gate electrode of all of the plurality of erasable and programmable memory cell transistors, (2) the gate electrode of the selection transistor, and (3) the gate electrode of the peripheral transistor; and~~
~~a second post-oxidation film provided on the gate electrode of the selection transistor;~~
~~a third post-oxidation film provided on the gate electrode of the peripheral transistor;~~
and

an insulating film covering the plurality of erasable and programmable memory cell transistors, the selection transistor, and the peripheral transistor, the insulating film being harder for an oxidizing agent to pass therethrough than a silicon oxide film, ~~and the insulating film having an oxidized region, and the insulating film covering a side surface of the gate electrode of the selection transistor along the gate electrode of the selection transistor,~~

wherein the insulating film comprises a silicon nitride film, and the silicon nitride film contains hydrogen, and a concentration of the hydrogen ~~gradually becomes higher from the~~

surface of the silicon nitride film is more reduced at the surface of the silicon nitride film than in regions underneath the surface of the silicon nitride.

33. (New) The device according to claim 19, further comprising:
an element isolation region which isolates the memory cell region on the semiconductor substrate, wherein the insulating film covers a surface of the element isolation region and one of source and drain regions of the selection transistor.

34. (New) The device according to claim 33, wherein the insulating film includes an insulator different from the element isolation region.

35. (New) The device according to claim 32, further comprising:
an element isolation region which isolates the memory cell region on the semiconductor substrate, wherein the insulating film covers a surface of the element isolation region and one of source and drain regions of the selection transistor.

36. (New) The device according to claim 35, wherein the insulating film includes an insulator different from the element isolation region.